UNITED STATES DEPARTMENT OF COMMERCE United States Patent and Trademark Office Address: COMMISSIONER FOR PATENTS P.O. Box 1450 Alexandria, Virginia 22313-1450 www.uspto.gov

	APPLICATION NO.	FILING DATE	FIRST NAMED INVENTOR	ATTORNEY DOCKET NO.	CONFIRMATION NO.
	10/649,139	08/27/2003	Thomas D. Kleino	1001-039C1	5045
	25215 7590 08/20/2007 DOBRUSIN & THENNISCH PC 29 W LAWRENCE ST			EXAMINER	
				TOLIN, MICHAEL A	
	SUITE 210 PONTIAC, MI 48342	ART UNIT		PAPER NUMBER	
		1733			
			•	MAIL DATE	DELIVERY MODE
				08/20/2007	PAPER

Please find below and/or attached an Office communication concerning this application or proceeding.

The time period for reply, if any, is set in the attached communication.

	Application No.	Applicant(s)			
	10/649,139	KLEINO, THOMAS D.			
Office Action Summary	Examiner	Art Unit			
	Michael A. Tolin	1733			
The MAILING DATE of this communication appears on the cover sheet with the correspondence address Period for Reply					
A SHORTENED STATUTORY PERIOD FOR REPLY WHICHEVER IS LONGER, FROM THE MAILING DATE of time may be available under the provisions of 37 CFR 1.13 after SIX (6) MONTHS from the mailing date of this communication. If NO period for reply is specified above, the maximum statutory period versiliure to reply within the set or extended period for reply will, by statute Any reply received by the Office later than three months after the mailing earned patent term adjustment. See 37 CFR 1.704(b).	ATE OF THIS COMMUNICATION 36(a). In no event, however, may a reply be tin will apply and will expire SIX (6) MONTHS from the cause the application to become ABANDONE	N. nely filed the mailing date of this communication. D (35 U.S.C. § 133).			
Status					
	Responsive to communication(s) filed on <u>06 June 2007</u> .				
Pa)☐ This action is FINAL . 2b)☒ This action is non-final.					
3) Since this application is in condition for allowance except for formal matters, prosecution as to the merits is					
closed in accordance with the practice under Ex parte Quayle, 1935 C.D. 11, 453 O.G. 213.					
Disposition of Claims					
4) Claim(s) 32 and 34-56 is/are pending in the ap 4a) Of the above claim(s) is/are withdray 5) Claim(s) is/are allowed. 6) Claim(s) 32,34-56 is/are rejected. 7) Claim(s) is/are objected to. 8) Claim(s) are subject to restriction and/o	wn from consideration.				
Application Papers		,			
9) The specification is objected to by the Examiner.					
10)☐ The drawing(s) filed on is/are: a)☐ accepted or b)☐ objected to by the Examiner.					
Applicant may not request that any objection to the drawing(s) be held in abeyance. See 37 CFR 1.85(a).					
Replacement drawing sheet(s) including the correction is required if the drawing(s) is objected to. See 37 CFR 1.121(d). 11) The oath or declaration is objected to by the Examiner. Note the attached Office Action or form PTO-152.					
Priority under 35 U.S.C. § 119					
 12) Acknowledgment is made of a claim for foreign priority under 35 U.S.C. § 119(a)-(d) or (f). a) All b) Some * c) None of: Certified copies of the priority documents have been received. Certified copies of the priority documents have been received in Application No. Copies of the certified copies of the priority documents have been received in this National Stage application from the International Bureau (PCT Rule 17.2(a)). * See the attached detailed Office action for a list of the certified copies not received. 					
Attachment(s)					
1) Notice of References Cited (PTO-892) 2) Notice of Draftsperson's Patent Drawing Review (PTO-948) 3) Information Disclosure Statement(s) (PTO/SB/08) Paper No(s)/Mail Date	4) Interview Summary Paper No(s)/Mail D 5) Notice of Informal F 6) Other:	ate			

DETAILED ACTION

Claim Rejections - 35 USC § 112

1. The following is a quotation of the first paragraph of 35 U.S.C. 112:

The specification shall contain a written description of the invention, and of the manner and process of making and using it, in such full, clear, concise, and exact terms as to enable any person skilled in the art to which it pertains, or with which it is most nearly connected, to make and use the same and shall set forth the best mode contemplated by the inventor of carrying out his invention.

2. Claim 44 is rejected under 35 U.S.C. 112, first paragraph, as failing to comply with the written description requirement. The claim(s) contains subject matter which was not described in the specification in such a way as to reasonably convey to one skilled in the relevant art that the inventor(s), at the time the application was filed, had possession of the claimed invention.

Regarding claim 44, there is no support in the original disclosure for nodes contacting adjacent nodes. Applicant appears to be relying on the specification portion which reads "it is contemplated that the material, after expansion, may contain a plurality of nodes which are generally disposed in a random pattern . . . for achieving generally miniaturized chamber areas". However, the examiner does not find any indication in this portion or any portion of the original disclosure which clearly indicates that each node contacts an adjacent node after expansion. In particular, the recitation of miniaturized chamber areas does not clearly indicate the nodes are touching each other because channels between nodes would be considered miniaturized chamber

areas. Thus it does not appear Applicant possessed the limitation of the plurality of nodes each contacting an adjacent node at the time of the invention.

3. The following is a quotation of the second paragraph of 35 U.S.C. 112:

The specification shall conclude with one or more claims particularly pointing out and distinctly claiming the subject matter which the applicant regards as his invention.

4. Claims 32-44 are rejected under 35 U.S.C. 112, second paragraph, as being indefinite for failing to particularly point out and distinctly claim the subject matter which applicant regards as the invention.

Regarding claim 32, there is no antecedent basis for "the door inner panel" or "door outer panel".

Regarding claim 38, "its generally dry substantially non-tacky state" lacks proper antecedent basis. There is no indication of a non-tacky state in parent claims 32 or 37.

Regarding claim 44, the scope of the claimed "random pattern" is entirely unclear. For example, a straight line of evenly spaced nodes might be considered a random pattern because it is a pattern randomly selected from many possible patterns. Any pattern can be considered to be a random pattern using this reasoning. It is also unclear if the term "random pattern" includes normal deviations from a desired pattern which are the result of the precision of the extruding apparatus. The specification does not clearly defined the term "random pattern".

Application/Control Number: 10/649,139 Page 4

Art Unit: 1733

Claim Rejections - 35 USC § 103

5. The following is a quotation of 35 U.S.C. 103(a) which forms the basis for all obviousness rejections set forth in this Office action:

- (a) A patent may not be obtained though the invention is not identically disclosed or described as set forth in section 102 of this title, if the differences between the subject matter sought to be patented and the prior art are such that the subject matter as a whole would have been obvious at the time the invention was made to a person having ordinary skill in the art to which said subject matter pertains. Patentability shall not be negatived by the manner in which the invention was made.
- 6. Claims 32, 34-39, and 41-43 are rejected under 35 U.S.C. 103(a) as being unpatentable over Chrysler (Document titled "Vibration Damping Material for 1995 Chrysler JA Program Door Beam" filed July 12, 2006) in view of the Admitted Prior Art (specification, page 1), Ligon (US 5358397), and Hanley (US 5266133), and optionally further in view of Bryant (US 3872548).

Chrysler teaches a method of forming a vibration damping system for a door assembly of an automotive vehicle comprising the steps of forming a vibration damping material by extrusion, allowing the vibration damping material to become substantially tack free, mechanically attaching the vibration damping material to a door beam, mounting the door beam having the vibration damping material thereon onto a vehicle door, and expanding the vibration damping material so that it contacts and adheres to the exterior panel structure of the door. (page 1; Figures)

Chrysler does not explicitly recite that the vibration damping material adheres to a door outer panel, as claimed. However, it is clear from the Admitted Prior Art that it is typical for the expandable material to expand to the outer door panel. It would have been obvious to one of ordinary skill in the art at the time of the invention to adhere the

vibration damping material to the outer door panel because one of ordinary skill in the art would have been motivated to practice the invention in accordance with typical manufacturing techniques.

Chrysler does not teach the claimed step of applying the expandable vibration damping material with an extruder. Ligon explains that expandable sealant materials have been applied in a manner like that of Chrysler, as preformed materials (column 1, lines 15-39), or by applying pumpable sealants (column 1, lines 40-60). Ligon teaches automated robotic extrusion with a mini applicator as an alternative to these traditional methods for the advantages of high production rates and high precision (Abstract; column 2, lines 9-63; Figure 1). Bryant is optionally cited for a general recognition in the art that human application of sealant gives rise to errors in which joints are not properly sealed (column 1, lines 33-58). It would have been obvious to one of ordinary skill in the art at the time of the invention to apply an expandable material by extruding because one of ordinary skill in the art would have been motivated to achieve the high production rate and high precision taught by Ligon or to avoid the problem of human error well known in the art, as evidenced by Bryant.

Chrysler does not explicitly recite expanding the vibration damping material by heat, nor does Chrysler recite a specific material. Thus one of ordinary skill in the art would have been motivated to look to the prior art for suitable materials. Hanley teaches a dry, initially non-tacky sealant material which is expandable upon heating and is useful as an acoustic baffle with excellent sound attenuation properties (Abstract; column 1, lines 1-53; column 3, lines 5-44; column 13, lines 33-39). Hanley indicates

Application/Control Number: 10/649,139

Art Unit: 1733

the material is suitable for extrusion (column 10, lines 4-15). Hanley's expandable material provides improved adhesion to metals typically used in automobile manufacturing which are typically somewhat oily, superior water absorption properties over previously used materials, and excellent durability (column 2, lines 4-8; column 3, lines 1-5; column 13, lines 33-51). It would have been obvious to one of ordinary skill in the art at the time of the invention to use the expandable material taught by Hanley in the method of Chrysler as modified by the Admitted Prior Art and Ligon because one of ordinary skill in the art would have been motivated to achieve the adhesive strength, durability, and water absorption properties taught by Hanley.

Regarding claimed 34, Hanley teaches activation during heating which occurs as part of a painting operation (column 13, lines 5-32). While not explicitly recited, it is well known that activation during a painting operation avoids the necessity of a second heating step for activation of sealant materials. It would have been obvious to one of ordinary skill in the art at the time of the invention to perform the expanding step during such a painting operation because one of ordinary skill would have been motivated to avoid the need for an additional heating step.

Regarding claimed 37, when applying the material of Hanley by extrusion, the material would inherently be in a viscoelastic flowable state, since it must be flowable for extrusion to occur and any polymeric flowable substance will display a degree of elasticity.

Regarding claims 38 and 42, it is generally well known in the art of automobile manufacture to create subassemblies at one location and transport them to a

manufacturing line at another location where they are incorporated into an automobile which is being built. Such methods are employed, as is well known, for the motivation of reducing the need to provide warehouse space for subassemblies and for the motivation of reducing the amount of equipment necessary in assembly lines. It would have been obvious to one of ordinary skill in the art at the time of the invention to provide the claimed step of extruding by a supplier and shipping to a manufacturer because one of ordinary skill would have been motivated to reduce warehouse space and equipment at the manufacturing site. Since the sealant taught by Hanley is nontacky at ambient temperature, the limitation of claim 38 would be met when performing the steps of extruding by a supplier and subsequently shipping to manufacturer. Additionally, one of ordinary skill in the art would have readily appreciated that it would be desirable to transport the sealant of Hanley in a non-tacky state since it is well known that tacky substances used in the automotive industry easily adhere to unintended surfaces or workers. It would have been obvious to one of ordinary skill in the art at the time of the invention to provide the claimed step of allowing the material to return to a non-tacky state because one of ordinary skill in the art would have been motivated to avoid the sealant sticking to unintended surfaces or workers.

Regarding claimed 39, it appears from the Figures in Chrysler and its short description, as well as Applicant's arguments filed June 6, 2007 (pages 9, 10; Exhibit A), that the sealant was applied as a single strip. Thus the expected manner of applying the expandable material as modified by Ligon would be to apply a long strip of expandable material, which meets the claimed "single bead". It would have been

obvious to one of ordinary skill in the art at the time of the invention to extrude the expandable material as a single bead because one of ordinary skill would have been motivated to form a strip of expandable material in the manner suggested by Chrysler to obtain the desired vibration damping taught by Chrysler.

Regarding claim 41, although Chrysler does not indicate a metal tubular door intrusion beam, such intrusion beams are well known in the art for providing suitable reinforcement to vehicle doors. It would have been obvious to one of ordinary skill in the art at the time of the invention to use a metal tubular door intrusion beam because one of ordinary skill in the art would have been motivated to use any well known intrusion beam for its intended purpose of reinforcing a vehicle door. Only the expected result of providing suitable reinforcement in combination with the vibration damping taught by Chrysler has been achieved.

Regarding claim 43, Hanley teaches that the expandable material can expand between 100% and 1500%. Chrysler teaches the use of an expandable material for vibration damping. It is well known to one of ordinary skill that increased expansion results in the advantage of reduced weight and cost because less material is able to occupy the desired volume. Accordingly, one of ordinary skill would have been expected to perform routine experimentation in order to optimize for weight and cost while achieving the desired property of vibration damping taught by Chrysler. It would have been obvious to one of ordinary skill in the art at the time of the invention to provide the claimed degree of expansion because one of ordinary skill in the art would

have been motivated to achieve the desired vibration damping while optimizing for weight and cost of the expanded material.

7. Claims 40 and 43 are rejected under 35 U.S.C. 103(a) as being unpatentable over Chrysler in view of the Admitted Prior Art, Ligon and Hanley, and optionally further in view of Bryant as applied to claims 32, 34-49, and 41-43 above, and further in view of any one of Johansson (EP 0398586 A1), Kracke (US 5013597), or Ritzema (US 6024190).

Regarding claim 40, Chrysler as modified by the Admitted Prior Art, Ligon, and Hanley does not teach applying the expandable material as a plurality of nodes. It is noted that the claimed plurality of nodes does not distinguish over a discontinuous pattern of expandable material.

The examiner's position is that one of ordinary skill in the art would been motivated to apply the expandable material in a discontinuous pattern because the material is expensive and has a significant mass and a discontinuous pattern uses less material than a continuous pattern. For example, Ritzema teaches that expandable foam for vibration reduction is expensive and a discontinuous pattern saves material and money (Figures 1 and 2; column 3, lines 38-60; column 2, lines 58-61). Kracke teaches that sound insulating material has significant mass and that a discontinuous pattern can significantly reduce the mass of material used (column 1, lines 43-64; column 2, lines 18-62). Johansson teaches that a foam sound insulation material can be provided in a discontinuous pattern in order to cut costs by reducing the amount of

material used, even though it may result in a reduction of stiffness of the construction (Abstract; column 1, lines 37-51; column 3, lines 35-53). It would have been obvious to one of ordinary skill in the art at the time of the invention to provide the expandable material in Chrysler as modified by the Admitted Prior Art, Ligon, and Hanley in a discontinuous pattern because one of ordinary skill in the art would have been motivated to reduce mass or cost of material.

Claim 43 is rejected here in the alternative using the same reasoning applied in numbered paragraph 6 above. However, in the grounds of rejection of this numbered paragraph 7, Ritzema, Kracke, or Johansson have been cited as evidence of the examiner's statement that it was well known to one of ordinary skill in the art that the cost and/or weight of a sound absorbing layer are important factors which should be reduced while maintaining desired sound absorbing properties.

8. Claim 44 is rejected under 35 U.S.C. 103(a) as being unpatentable over Chrysler in view of the Admitted Prior Art, Ligon and Hanley, and optionally further in view of Bryant as applied to claims 32, 34-49, and 41-43 above, and further in view of Kracke or Ritzema.

Regarding claim 44, Chrysler as modified by the Admitted Prior Art, Ligon, and Hanley does not teach applying the expandable material as a plurality of nodes which contact adjacent nodes in a random pattern thereby forming the claimed chamber areas.

Kracke teaches a sound absorbing layer with a pattern of recesses, indentations, or knobs in order to reduce weight and provide adequate sound insulation (Abstract; column 1, lines 43-65; column 2, lines 18-62). The claimed random pattern of nodes contacting adjacent nodes to form the claimed chamber areas does not distinguish over the pattern of various knobs and indentations suggested by the Figures in Kracke (Figures 1-6). It would have been obvious to one of ordinary skill in the art at the time of the invention to apply the expanded material in Chrysler as modified by the Admitted Prior Art, Ligon, and Hanley as a plurality of nodes which contact adjacent nodes in a random pattern thereby forming the claimed chamber areas in order to reduce weight while still providing adequate vibration insulation in accordance with the teachings of Kracke.

Ritzema teaches a vibration absorbing layer with reduced contact area between the vibration absorbing layer and a vibrating layer in order to reduce the transmission of vibrations (column 2, lines 58-67). Ritzema also teaches that such a pattern reduces the amount of material used and thereby reduces cost (column 3, lines 38-60). It is clear from Figures 1 and 2 that the pattern suggested by Ritzema includes raised portions contacting each other which satisfy the claimed nodes and which form chamber areas which inherently absorb vibrations and sound frequencies because any chamber of air will dampen vibrations to a certain extent. Regarding the claimed random pattern, any pattern is a random pattern because any pattern can be considered a pattern randomly selected from known patterns, absent a clear definition in the specification as to what is meant by the claimed random pattern. It would have been obvious to one of

ordinary skill in the art at the time of the invention to apply the expanded material in Chrysler as modified by the Admitted Prior Art, Ligon, and Hanley as a plurality of nodes which contact adjacent nodes in a random pattern thereby forming the claimed chamber areas in order to reduce cost and also to reduce the transmission of vibrations in accordance with the teachings of Ritzema.

9. Claim 40 is rejected under 35 U.S.C. 103(a) as being unpatentable over Chrysler in view of the Admitted Prior Art, Ligon and Hanley, and optionally further in view of Bryant as applied to claims 32, 34-49, and 41-43 above, and further in view of Fitzgerald (US 2002/0074827).

Regarding claim 40, Chrysler as modified by the Admitted Prior Art, Ligon, and Hanley does not teach applying the expandable material as a plurality of nodes. It is noted that the claimed plurality of nodes does not distinguish over a discontinuous pattern of expandable material. Claim 40 is rejected here in the alternative to show additional motivation for arriving at the claimed invention.

The examiner's position is that one of ordinary skill would have been motivated to apply the expandable material in a discontinuous pattern because Fitzgerald teaches such for allowing greater access of heated air to the expandable material during heat activation, leading to improved expansion (Abstract; Figures 1 and 8; paragraph 5). It would have been obvious to one of ordinary skill in the art at the time of the invention to provide the expandable material in Chrysler as modified by the Admitted Prior Art, Ligon, and Hanley in a discontinuous pattern because one of ordinary skill in the art

would have been motivated to provide improved expansion in accordance with the teaching of Fitzgerald.

10. Claims 45-48 and 50-56 are rejected under 35 U.S.C. 103(a) as being unpatentable over Chrysler in view of Ligon and Hanley, and optionally further in view of Bryant.

Each reference is applied as above in the rejection of claims 32, 34-39, and 41-43 in numbered paragraph 6. Since the claims rejected here do not recite an outer door panel, the Admitted Prior Art is not applied here.

Regarding the expandable material composition limitations of claims 53-55, these limitations are clearly met by the expandable material of Hanley (column 4, lines 55-68; column 6, lines 30-35; column 7, lines 35-45).

Regarding claim 56, since the expandable material of Hanley displays excellent adhesion to metals typically used in automobile manufacturing (column 13, lines 32-51), it is clearly capable of bonding in the claimed manner. It is noted that the limitation of "for bonding" does not positively require bonding, but merely the capability of bonding. Regardless, the material of Hanley would inherently bond to the door beam and exterior panel structure when used in accordance with the teachings of Chrysler as modified by Ligon due to the adhesive characteristics of the expandable material taught by Hanley.

11. Claim 49 is rejected under 35 U.S.C. 103(a) as being unpatentable over Chrysler in view of Ligon and Hanley, and optionally further in view of Bryant as applied to claims

45-48 and 50-56 above, and further in view of any one of Johansson, Kracke, or Ritzema.

Each reference is applied as above in the rejection of claims 40 and 43 in numbered paragraph 7. Since the claims rejected here do not recite an outer door panel, the Admitted Prior Art is not applied here.

12. Claim 49 is rejected under 35 U.S.C. 103(a) as being unpatentable over Chrysler in view of Ligon and Hanley, and optionally further in view of Bryant as applied to claims 45-48 and 50-56 above, and further in view of Fitzgerald.

Fitzgerald is applied as above in the rejection of claim 40 in numbered paragraph

9. Since the claims rejected here do not recite an outer door panel, the Admitted Prior

Art is not applied here.

Response to Arguments

13. Applicant's arguments filed June 6, 2007 have been fully considered but they are not persuasive.

Applicant argues there is no suggestion in the prior art that the expandable material will be better supported when applied by extrusion, as claimed, rather than by mechanical attachment as in Chrysler. Applicant refers to pictures which show the improved support. This argument is not persuasive because the motivation to apply the expandable material by extrusion, as claimed, comes from Ligon's teaching of high precision and production rate, optionally in view of Bryant's teaching of human error

when sealant is applied by workers. The fact that Applicant has recognized another advantage which would flow naturally from following the suggestion of the prior art cannot be the basis for patentability when the differences would otherwise be obvious. See *Ex parte Obiaya*, 227 USPQ 58, 60 (Bd. Pat. App. & Inter. 1985).

Applicant asserts there is no suggestion in the prior art to believe extrusion would provide a bond of sufficient strength to withstand transportation and assembly conditions. This assertion is not persuasive because the examiner has provided motivation to perform the claimed transportation step, for the well known advantages of reducing warehouse space and equipment at the manufacturing plant, and Applicant has provided no evidence of unexpected results with regard to transportation.

Furthermore, the material of Hanley is suggested for excellent adhesion to automotive parts which are somewhat oily, and Ligon suggests extruding sealant onto oily substrates (column 6, lines 64-68). The prior art clearly suggests adequate adhesion to automotive substrate surfaces during assembly conditions.

Applicant argues there is no evidence to suggest the expandable material would be able to jump the gap between the door beam and the door panel. This argument is not persuasive because Chrysler teaches that the expandable material expands to contact and adhere to the exterior panel structure of the door. Accomplishing the required degree of expansion involves no more than extruding a sufficient amount of expandable material onto the door beam. Selection of sufficient material involves no more than routine experimentation in accordance with Chrysler's teaching that the material expands to contact the panel structure of the door.

Applicant argues the claimed method is unobvious because automation equipment is expensive. The examiner cited motivation for using automated extrusion equipment, specifically an increase in precision and production rate along with reducing human error. The fact that such equipment is expensive does not make the claimed subject matter unobvious because it is well within the purview of ordinary skill in the art to balance cost against the art recognized parameters of precision, production rate, and human error.

Applicant argues the door beam does not require openings. Such has not been claimed. Applicant argues extrusion avoids interference caused by e-coat locating itself between the beam and the expandable material. A step of applying e-coat has not been claimed. Although the claims are interpreted in light of the specification, limitations from the specification are not read into the claims. See *In re Van Geuns*, 988 F.2d 1181, 26 USPQ2d 1057 (Fed. Cir. 1993).

Conclusion

14. Any inquiry concerning this communication or earlier communications from the examiner should be directed to Michael A. Tolin whose telephone number is 571-272-8633. The examiner can normally be reached on M-F 9am to 5:30pm.

If attempts to reach the examiner by telephone are unsuccessful, the examiner's supervisor, Richard Crispino can be reached on 571-272-1226. The fax phone number for the organization where this application or proceeding is assigned is 571-273-8300.

Application/Control Number: 10/649,139 Page 17

Art Unit: 1733

Information regarding the status of an application may be obtained from the Patent Application Information Retrieval (PAIR) system. Status information for published applications may be obtained from either Private PAIR or Public PAIR. Status information for unpublished applications is available through Private PAIR only. For more information about the PAIR system, see http://pair-direct.uspto.gov. Should you have questions on access to the Private PAIR system, contact the Electronic Business Center (EBC) at 866-217-9197 (toll-free). If you would like assistance from a USPTO Customer Service Representative or access to the automated information system, call 800-786-9199 (IN USA OR CANADA) or 571-272-1000.

Michael A. Tolin

GROUP 1300